FEBRUARY-JUNE 1936 NUMBERS 300-310

# THE UNIVERSITY OF NORTH CAROLINA RECORD

## THE ONE HUNDRED AND FORTY-SECOND SESSION

## CATALOGUE ISSUE
1935-1936

*Announcements for the Session*
*1936-1937*

THE UNIVERSITY OF NORTH CAROLINA PRESS
ISSUED 12 TIMES A YEAR AS FOLLOWS: 4 NUMBERS IN FEBRUARY, 3 NUMBERS IN MARCH, 3 NUMBERS IN APRIL, 1 NUMBER EACH IN JUNE AND OCTOBER
ENTERED AS SECOND-CLASS MATTER AT THE POSTOFFICE AT
CHAPEL HILL, N. C.
UNDER THE ACT OF AUGUST 24, 1912

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**This composite catalogue contains the following issues of the *Record.***

The General Catalogue
The General College
The College of Arts and Sciences
The School of Commerce
The School of Public Administration
The Graduate School
The School of Law
The School of Medicine
The Division of Public Health
The School of Pharmacy
The School of Library Science
The Summer Session

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FEBRUARY 10, 1936 NUMBER 300

# THE UNIVERSITY OF NORTH CAROLINA RECORD

## THE ONE HUNDRED AND FORTY-SECOND SESSION

## CATALOGUE OF THE SCHOOL OF MEDICINE

1935-1936

*Announcements for the Session*
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# CATALOGUE OF EVENTS

## SESSION, 1936-1937

**1936**

| | |
|---|---|
| *June 7-9* | *Sunday through Tuesday.* Commencement Exercises. |
| *June 11-July 22* | Summer Session, First Term. |
| *July 23-August 29* | Summer Session, Second Term. |
| *September 17* | *Thursday.* Registration for the fall quarter. |
| *September 18* | *Friday.* Class work for the fall quarter begins. |
| *October 12* | *Monday.* University Day. |
| *November 25* | *Wednesday.* Thanksgiving Recess begins (1:00 p. m.). |
| *November 30* | *Monday.* Thanksgiving Recess ends (8:30 a. m.). |
| *December 10-19* | *Thursday* to 1:00 p. m. *Saturday* of following week. Registration for the winter quarter. |
| *December 15-19* | *Tuesday through Saturday* (1:00 p. m.). Examinations for the fall quarter. |
| *December 19 (afternoon)*— | |
| *December 30* | Christmas Recess. |

**1937**

| | |
|---|---|
| *January 1* | *Friday.* Class work for the winter quarter begins. |
| *March 5-13* | *Friday* to 1:00 p. m. *Saturday* of following week. Registration for the spring quarter. |
| *March 9-13* | *Tuesday through Saturday* (1:00 p. m.). Examinations for the winter quarter. |
| *March 15* | *Monday.* Registration of new students. |
| *March 16* | *Tuesday.* Class work for the spring quarter begins. |
| *April 11-18* | *Sunday through Sunday.* Spring Recess. |
| *May 31-June 4* | *Monday through Friday.* Examinations for the spring quarter. |
| *June 6-8* | *Sunday through Tuesday.* Commencement Exercises. |

## INFORMATION PERTAINING TO THE GENERAL UNIVERSITY

The School of Medicine is one of the divisions of the University of North Carolina, located at Chapel Hill. It is governed by the same administration, the same board of trustees, the same laws and regulations as the rest of the university.

The pre-medical record of each applicant for admission must be passed upon and approved by the Dean of Admissions of the University before the application can be taken under consideration by the Dean and the committee on admissions of the Medical School.

### STUDENT GOVERNMENT

The student body of the university is self-governing. The functions of this government are both disciplinary and constructive. These functions are exercised by the Student Council which is elected by the student body. The Medical School is represented on this council by a member of the second-year class. Student government, insofar as it is disciplinary, is based upon the honor principle. No code of rules is laid down to direct a student what to do and what not to do. The only standards are those of morality and gentlemanly conduct, and obedience to the laws of North Carolina. The Student Council has power to suspend or dismiss a student from the university, but the final and supreme power is in the general university faculty, delegated to it by the Board of Trustees.

### WITHDRAWALS

Formal withdrawal, which is prerequisite to honorable dismissal or reëntrance to this institution, must be approved by the student's Dean to be valid. Such a withdrawal will be approved only after full investigation of the circumstances and after the lapse of twenty-four hours from the time the first application is filed with the Dean. The withdrawal form after approval by the Dean must be filed promptly with the Recorder in room 8, the South Building.

If a student withdraws after the mid-term and is reported as below passing in two or more courses, that quarter will be counted as a quarter in residence in all computations of his requirements for readmission. If a student withdraws before mid-term, it will be left to the discretion of the Dean as to whether or not that quarter is to be counted as a quarter in residence. The Dean's verdict will be indicated specifically on the form used for withdrawal.

### HEALTH AND RECREATION

The health of the student community is cared for by the maintenance of a properly appointed infirmary with a staff of well trained physicians and nurses. The university gymnasium and five large ath-

letic fields provide ample facilities for exercise and recreation, all under the supervision and direction of a well organized department of physical education.

## LIBRARIES

In addition to the specialized departmental and school libraries the general university library, containing over two hundred and eighty thousand volumes, offers its opportunities to members of all divisions of the institution.

## LOCATION

Chapel Hill is thirty miles west of Raleigh, the capital of the State, in the beautiful Piedmont section of hills and forests, served by the Southern Railway, and entered from every point by paved roads. Its environment of natural beauty and simple culture, of age and traditions, is impressive. The University of North Carolina, the first state university to open its doors in America and a member of the Association of American Universities, is recognized as a leader among educational institutions.

# THE SCHOOL OF MEDICINE

Frank Porter Graham, M.A., LL.D., D.C.L., D.Litt., *President.*
Robert Burton House, A.M., *Dean of Administration.*
Charles Staples Mangum, A.B., M.D., *Dean.*

## *THE ADMINISTRATIVE BOARD

Isaac Hall Manning, M.D.
William DeBerniere MacNider, M.D., Sc.D., LL.D.
James Bell Bullitt, A.M., M.D.
Wesley Critz George, Ph.D.
Robert Ervin Coker, Ph.D.
Ralph Walton Bost, Ph.D.
English Bagby, Ph.D.
†Herman Glenn Baity, Sc.D.
Daniel Allan MacPherson, Sc.M., Ph.D.

## COMMITTEE ON ADMISSION AND PROMOTION

Charles Staples Mangum, A.B., M.D.
William DeBerniere MacNider, M.D., Sc.D., LL.D.
James Bell Bullitt, A.M., M.D.
Wesley Critz George, Ph.D.

## SPECIAL STAFF

Charles Staples Mangum, A.B., M.D., *Professor of Anatomy.*
Isaac Hall Manning, M.D., *Professor of Physiology.*
William DeBerniere MacNider, M.D., Sc.D., LL.D., *Kenan Research Professor of Pharmacology.*
James Bell Bullitt, A.M., M.D., *Professor of Pathology.*
Wesley Critz George, Ph.D., *Professor of Histology and Embryology.*
Daniel Allan MacPherson, Sc.M., Ph.D., *Professor of Bacteriology.*
Robert Baker Lawson, M.D., *Associate Professor of Applied Anatomy.*
Evan William McChesney, Ph.D., *Associate Professor of Biological Chemistry.*
Grant Lester Donnelly, A.B. in Educ., M.D., *Associate Professor of Pharmacology.*
Augustus Steele Rose, B.S., M.D., *Associate Professor of Anatomy.*
Walter Reece Berryhill, A.B., M.D., *Associate Professor of Pathological Physiology and Physical Diagnosis.*
Robert Alexander Ross, M.D., *Lecturer on Obstetrics.*
Thomas Henderson Byrnes, B.S., M.D., *Instructor in Pathology.*
James Workman Culbertson, B.S., A.M., *Instructor in Anatomy.*
Edward McGowan Hedgpeth, A.B., M.D., *Instructor in Anatomy.*
William Kirk Swann, S.B. in Med., *Assistant in Bio-Chemistry.*
William Harris Davis, Jr., *Assistant in Bacteriology.*
Fletcher S. Sluder, *Assistant in Anatomy.*

* The Dean of Administration, the Registrar, and the Dean of Students are *ex officio* members of each Administrative Board.
† Absent on leave, 1935-1936.

## GENERAL STATEMENT

The School of Medicine was established in 1879 under the direction of Dr. Thomas W. Harris. A course in theoretical and practical medicine was offered under the preceptorial system, but the plan was found impracticable and was abandoned in 1886. In 1890, a more orderly and logical arrangement of the subjects in the medical course having developed, it became possible for an institution without clinical facilities to offer instruction in the pre-clinical subjects, and the school was reopened with Dr. Richard H. Whitehead as Dean and Professor of Anatomy. Under his guidance it soon won recognition for thoroughness of instruction and excellence in scholarship and has since continued without interruption to its growth. At first the course covered only one year, but in 1896, the medical course having been extended in the better class of schools to four years, a two-year course was inaugurated. In 1900 the School of Medicine was incorporated as an integral part of the University and was reorganized to meet the requirements of the first two years of the full four-year course leading to the degree of Doctor of Medicine. In 1902 it was expanded into a four-year school, and the clinical subjects of the third and fourth years were offered in Raleigh under the direction of Dr. Hubert A. Royster as Dean. After a few years of successful operation, this plan had to be abandoned for lack of financial support, and the clinical subjects were dropped. In 1908 the school was admitted to membership in the Association of American Medical Colleges, and is ranked in the class "A" group by the American Medical Association.

The curriculum is arranged to cover all of the laboratory or pre-clinical subjects of the four-year course in medicine and includes, in the last part of the second year, introductory clicinal courses which serve to lessen the abruptness of the change from the laboratory to the hospital.

Students who have successfully completed the two-year course are transferred into the third year of American medical colleges of the highest rank from which they receive the degree of doctor of medicine. Sixty percent of those who have attended the school have returned to North Carolina to practise medicine. Approximately twenty-five percent of the physicians now in active practice in North Carolina received the first two years of their medical training here.

The School of Medicine is located on the University campus in close association with all other university activities. The classes are limited to thirty-six students and, since this is a state institution, preferential consideration is given applicants for admission who are citizens of North Carolina.

The students of the Medical School are regularly enrolled in the University, enjoy all the privileges of University students, and are amenable to all general University regulations and to the special regulations of the Medical School.

## REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the medical curriculum are three years of college work, which must include a minimum of twelve semester hours in chemistry (including four semester hours of organic chemistry), eight semester hours in biology (at least 4 semester hours being in zoölogy), eight semester hours in physics (which must have required trigonometry as prerequisite), six semester hours in English, and six semester hours in a modern foreign language beyond the amount required in the language chosen for admission to the University. *No student will be admitted with less than three years of accredited collegiate work, or with a condition on any of the required subjects in science.* All admissions are decided by the Dean of the School of Medicine and a special committee on admissions to the school. The maximum number admitted to the first year class is thirty-six. The Dean and special committee reserve the right to select from the entire list of applicants those who in their judgment are best qualified for the study of medicine.

### Admission to Advanced Standing

Candidates for admission to the second year of the medical curriculum must present certificates from an accredited medical school stating that they have had the required fifteen units, at least three years of college work as indicated above, and have completed the subjects of the first year of the medical course as outlined.

## BACHELOR OF SCIENCE IN MEDICINE

The University recommends to each applicant that he prepare himself as fully as his age and resources permit. If possible he should first secure a bachelor's degree, either A.B. or S.B., before beginning his professional study. If this is impracticable, he may secure excellent preparation by completing the academic curriculum, outlined below, leading to the degree of Bachelor of Science in Medicine. The degree is conferred upon the completion of the two years of work offered in the medical school.

Note: Students pursuing the academic subjects listed below are hereby notified that the completion of these courses does not necessarily mean admission to our School of Medicine. From the rather long list of applicants are chosen thirty-six who are deemed the most promising material for admission to our School. No arrangement exists for granting the degree of S.B. in Medicine for work in any medical school other than ours. Therefore, in order to secure our S.B. in Medicine, the student must complete the two years of work offered in our School of Medicine and in no other such school. To be eligible for the degree of S.B. in Medicine, at least the last year of premedical work must have been done in this institution.

FRESHMAN YEAR

*Fall Quarter:* Chemistry 4, English 1, Mathematics 1, *French 11 or German 11, Social Science 1.

*Winter Quarter:* Chemistry 5, English 2, Mathematics 2, *French 12 or German 12, Social Science 2.

*Spring Quarter:* Chemistry 31, English 3, Mathematics 3, *French 13 or German 13, Social Science 3.

SOPHOMORE YEAR

*Fall Quarter:* Chemistry 42, English 21, Botany 41, *French 21 or German 21.

*Winter Quarter:* Zoölogy 41, English 22, *French 22 or German 22, **Elective.

*Spring Quarter:* Zoölogy 42, English 23, *French 23 or German 23, **Elective.

JUNIOR YEAR

*Fall Quarter:* Physics 21, Psychology 21, Chemistry 61, **Elective.

*Winter Quarter:* Physics 22, Psychology 22, Chemistry 62, **Elective.

*Spring Quarter:* Physics 23, Psychology 23, **2 electives.

## EXPENSES

**The University reserves the right to make, with the approval of the proper authorities, changes in any fees at any time.**

### Tuition and Other Fees for Each Quarter

Each student whose *bona fide* residence has not been established in North Carolina for at least the six months immediately prior to his first registration in the University must pay an extra fee of $33.34 for each fall, winter, or spring quarter he spends in residence. The residence of a minor is that of his parents or guardian. The residence of an adult remains with his parents or guardian unless he shall have independently set up his own.

*Bona fide* residence means that the student is not in North Carolina primarily to attend the University and that his status as a resident has not been set up merely as a technical bar to the extra charge.

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* The intermediate courses (11-12-13) in French or German or both are to be taken provided the student shows evidence of adequate preparation; otherwise he takes the elementary courses (1-2-3) in the language or languages. The elementary courses, meeting six hours a week, are designed to cover both the elementary and intermediate work. In case both French and German are elected, the requirement is met in three quarters (courses 1-2-3 or 11-12-13); in case only one language is taken, courses 21-22-23 also must be completed, six quarters in all being required.

** Electives to the number needed to give at least 20 quarter hours of credit are required.

Mere ownership of property or payment of taxes apart from residence does not qualify one as a resident nor may a student qualify by living in North Carolina the six months immediately prior to his first registration, unless he continues so to live during the whole period of his stay at the University.

| | |
|---|---|
| *Tuition and Matriculation | $83.34 |
| Student Publications | 2.00 |
| Laundry Deposit | 8.50 |
| Student Union fee | 1.00 |
| Total for each quarter | $94.84 |

A deposit of $10 is required at the first registration of the year to cover the cost of materials purchased from the medical store room. Any balance of this deposit left at the end of the college year will be refunded.

## SPECIAL NOTICE

*An applicant notified of his acceptance must deposit with the Cashier of the University, not later than June 15, the sum of $50.00; otherwise the acceptance will be withdrawn. If the applicant presents himself for registration the deposit will be accredited to his account; otherwise the deposit will be forfeited.*

## SCHOLARSHIPS

The Wood Scholarship. (Established in 1895.) Mrs. Mary Sprunt Wood, of Wilmington, has founded a scholarship in memory of her husband, the late Dr. Thomas Fanning Wood.

The Mrs. Augustus H. Jones Scholarship was created in 1930 by Mrs. James H. Parker, of New York City. The recipient of this scholarship is to be designated by Mrs. James H. Parker during her lifetime and thereafter upon the recommendation of the New York Chapter of the United Daughters of the Confederacy. Failing this recommendation from either source, appointment is to be made by the President of the University, preference being given first to relations of the late Dr. James H. Parker, of New York, and second to relations of the donor.

### Board

At this date Swain Hall is not being operated. It is hoped that arrangements will be made to offer next fall excellent board there and a combination rate to those who room in a dormitory.

* This fee includes fee for physical education, the library fee, the fee for infirmary service, and the fee for debates.

Board without room can be obtained in the town from $22.50 to $35.00 a month.

### Dormitory Accommodations for Men

Accommodations for approximately fourteen hundred students are available in the University dormitories.

All rooms in the dormitories are completely furnished. Students will, however, provide their own pillows, bed linen (for single beds), blankets, and towels.

Room rent ranges from $5.25 to $10.00 a month for each occupant, the price depending upon the location of the room. This charge includes light, heat, and service. Rooms are leased for the scholastic year.

## REGISTRATION

All students are expected to present themselves for registration *Thursday, September 17, 1936,* between the hours of 9 a.m. and 5 p.m., at the place announced in the plan for registration.

Bills for the fall quarter are payable at the time of registration. Bills for the winter and spring quarters are payable at the Business office on the first class day of the quarter. Failure to pay or to make proper arrangements for payment results in the assessment of an extra fee of $5.00.

## DELAYED REGISTRATION

The penalty for delayed registration for any quarter is one month of strict attendance probation for each day of delay. Any student registering later than the time appointed for his registration must pay five dollars ($5.00) as an additional fee for delayed registration. No appeal from the imposition of either attendance probation or the late registration charge of five dollars will be granted, unless the delay is due to circumstances clearly beyond the student's control. Such appeals must be made in writing to the Dean of Administration, must show clearly good and sufficient justification for the delay in registering, and must bear the approval of the Dean of the division of the University in which the appellant is enrolled.

## THE MEDICAL CURRICULUM

The medical curriculum covers two years of thirty-four weeks each, divided into three periods, or quarters, of approximately equal length.

### First Year

BIOLOGICAL CHEMISTRY: Nine hours a week, winter quarter.

HISTOLOGY: Nine hours a week, fall quarter; six hours a week, winter quarter.

Gross Anatomy: Seventeen hours a week, fall quarter; seventeen hours a week, winter quarter.

Neuro-Anatomy: Twelve hours a week, spring quarter.

Embryology: Three hours a week, fall quarter; six hours a week, spring quarter.

Bacteriology: Fifteen hours a week, spring quarter.

**Second Year**

Biological Chemistry: Six hours a week, fall quarter.

Physiology: Twelve hours a week, fall quarter; twelve hours a week, winter quarter.

Immunology: Nine hours a week, fall quarter.

Pathology: Six hours a week, fall quarter; eight hours a week, winter quarter; twelve hours a week, spring quarter.

Pharmacology: Three hours a week, fall quarter; ten hours a week, winter and spring quarters.

Surgical Anatomy: Four hours a week, winter quarter.

Hygiene: Three hours a week, winter quarter.

Physical Diagnosis: Seven hours a week, spring quarter.

Obstetrics: One hour a week, winter quarter.

**Summary of First and Second Year**

| *Subjects* | *Hours* |
|---|---|
| Biological Chemistry | 162 |
| Anatomy | 992 |
| Physiology | 264 |
| Pharmacology | 236 |
| Bacteriology and Immunology | 258 |
| Pathology | 332 |
| Surgical Anatomy | 40 |
| Hygiene | 30 |
| Physical Diagnosis | 70 |
| Obstetrics | 10 |

## EXAMINATIONS

The regular examinations in the Medical School are held during the regular examination periods of the College of Arts and Sciences at the close of each quarter. First year students will be allowed special examinations for the removal of conditions during the week preceding the close of the third quarter, or during the registration week in September.

An examination will not be allowed a student who is charged with ten per cent. of unexcused absences, or with absences amounting to twenty per cent. of the total number of hours assigned the subject.

## PROMOTIONS

If a first year student makes a grade of F on any subject, or a grade of E with failure to remove it by subsequent examination, he will be required to withdraw from the school. Two grades of E debar the student from examinations to remove these conditions. A first-year student who has been dropped from the Medical School and has returned to college and done creditable work for three quarters may be considered for readmission to the first-year class.

If a second-year student makes a grade of E on any subject he may be given another examination on that subject at any subsequent examination period or during the following month of July. If the student is a candidate for S.B. in Medicine and makes a grade of E in his last quarter of residence, he is allowed to take a special examination for removal of the E not earlier than three days after his last examination in that period of examinations. But no student shall be allowed a re-examination on more than one major subject. If he makes an F on any major subject he shall not be allowed a re-examination on any subject. He may be allowed to repeat the second year with the consent of the faculty.

## COURSES OF INSTRUCTION

Certain courses in the curriculum of the School of Medicine are approved by the Graduate School as minors for the master's and doctor's degree. For details see Catalogue of the Graduate School.

NOTE: Courses having the figure 1 as the first digit in their numbers are for first year students; those whose numbers begin with 2 are for second year students.

## DEPARTMENT OF ANATOMY

The courses include gross and microscopic anatomy, embryology, the topography of the body, the application and relation of anatomy to medicine and surgery, and the anatomy of the central nervous system and the organs of special sense.

101. GROSS ANATOMY.

The student dissects the human body under the constant supervision and direction of an instructor. Laboratory talks, demonstrations, and conferences take the place of lectures. Practical examinations are held on the cadaver. The subject matter is presented from the standpoint of development and function and special emphasis is placed upon the relationship of surface and regional anatomy to medical and surgical diagnosis. Each student is provided with a complete set of disarticulated bones which he is required to demonstrate. *Seventeen hours a week, fall and winter quarters.* Professors Rose, Mangum.

105. CENTRAL NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.

A special laboratory study of the gross and microscopic anatomy of the cord and brain. Each student is provided with numerous prepared dissections of the human brain and a series of sections through the cord of the

brain stem which he studies with the aid of a guide. A human brain is then given to each group of six men and by them dissected in order to correlate and systematize the work already done. A practical examination tests the student's ability to locate the various tracts and nuclei. *Twelve hours a week, spring quarter.* Professor Mangum. See Catalogue of the Graduate School.

112. GENERAL HISTOLOGY AND ORGANOLOGY.

Includes: (a) Study of the fundamental tissues, followed by (b) the study of the microscopic structure of the organs of the body, in connection with an examination of their gross structure. Lectures, demonstrations, and laboratory. *Nine hours a week, fall quarter; six hours a week, winter quarter.* Professor George; Mr. Culbertson. See Catalogue of the Graduate School.

114. EMBRYOLOGY.

(a) Lectures and laboratory study of the early processes in the formation of the vertebrate body. (b) Lectures, demonstrations, and laboratory study of human and other mammalian embryos. *Three hours a week, fall quarter; six hours a week, spring quarter.* Professor George; Mr. Culbertson. See Catalogue of the Graduate School.

123. CYTOLOGY AND HISTOGENESIS.

Those who have completed course 112 or its equivalent will be offered an opportunity to pursue further work in Cytology and Histogenesis. Arrangements for this course may be made with the instructor. Professor George; Mr. Culbertson.

236. SURGICAL ANATOMY.

A review of anatomy in its relation to surgical diagnosis and technique. The surface markings of the organs of the body, their location and interrelationship. Incisions for reaching arteries and nerves. Influence of the action of muscles upon fractures and luxations. The application of bandages and splints, and the dressing of wounds. Lectures, and x-ray plates. *Four hours a week, winter quarter.* Professor Lawson.

## DEPARTMENT OF BACTERIOLOGY

51. ELEMENTARY BACTERIOLOGY. Prerequisite, General Chemistry and one course in Botany or Zoölogy. *Elective.

A lecture and laboratory course offered as a general science course. The fundamental principles of bacteriology are emphasized, and the student is trained in general bacteriological technique. The morphological and biological characteristics of the molds, yeasts, and saprophytic bacteria are studied. Pure cultures are isolated from air and water, and identification attempted. The applications of bacteriology to agriculture, industry, and the home are considered. (Registration of a minimum of six students required.) *Nine hours a week (lectures and laboratory), winter quarter. Laboratory fee, $4.00.* Professor MacPherson; Mr. Davis.

132. PATHOGENIC BACTERIOLOGY. Required of medical students. Prerequisite, for academic students, General Chemistry, Chemistry 31, and Bacteriology 51, or equivalent. *Elective.

The early weeks of the course are devoted to a thorough grounding in the fundamental principles of bacteriology. Each student prepares the various culture media in common use; cultivates and describes several non-pathogens from stock cultures; and practises the more useful staining methods. Pure

* Before registering for this course the academic student must secure the permission of his Dean. This course is not a part of the medical curriculum.

cultures are isolated from air and water and their biology studied. The major portion of the course is devoted to the detailed study of the pathogens. Unknown mixtures are used to test the student's ability to differentiate organisms of the various groups. Practical applications of bacteriology in the diagnosis of disease are stressed by the examinations of sputa, pus, feces, and blood. Animal inoculations are made to demonstrate the process of infection and the differentiation of certain organisms. Lectures cover all the more important diseases. *Fifteen hours a week (lectures and laboratory), spring quarter. Laboratory fee for non-medical students, $6.00.* Professor MacPherson; Mr. Davis. See Catalogue of the Graduate School.

233. INFECTION, IMMUNITY, AND SERUM DIAGNOSIS. Required of medical students. Prerequisite, Bacteriology 132 or its equivalent. *Elective.

The early laboratory work is designed to demonstrate the basic principles of immunology and serology. Practical training is given in the production and use of agglutinins, precipitins, lysins, and complement fixing antibodies. Vaccines are prepared, and their use demonstrated. The preparation and standardization of antimicrobic and antitoxic sera are studied. Anaphylaxis and allergy are produced in animals, and methods of diagnosis and desensitization practised. The student is required to prepare his own materials and to inject and bleed animals himself. Special attention is given to the use of these principles in the diagnosis of blood stains, blood grouping, typhoid fever, typhus fever, diphtheria, tuberculosis, hay fever, gonorrhea, and syphilis. Unknown specimens test the student's ability to use the reactions. Lectures consider the principles of infection, immunity, and resistance. *Nine hours a week (lectures and laboratory), fall quarter. Laboratory fee for non-medical students, $10.00.* Professor MacPherson; Mr. Davis. See Catalogue of the Graduate School.

234. PUBLIC HEALTH AND HYGIENE. Prerequisite, Bacteriology 132. *Elective.

Lectures and quizzes on the sources, mode of spread, and control of communicable diseases; ventilation; water and sewage purification; soil pollution; hygiene of foods; carriers; and insect vectors. *Three hours a week, winter quarter.* Professor MacPherson.

235. PUBLIC HEALTH LABORATORY METHODS. Prerequisite, Bacteriology 132 or its equivalent. *Elective.

A course of training in the modern bacteriological methods employed in the routine work of a public health laboratory. Practice is afforded in the laboratory diagnosis of diphtheria, tuberculosis, typhoid fever, pneumonia, malaria, gonorrhea, syphilis, and rabies. The bacteriological examination of water, milk, and canned goods is also practised. The course is designed for medical students and those wishing to qualify as bacteriological laboratory technicians. *Six hours a week, spring quarter. Laboratory fee for non-medical students, $6.00.* Professor MacPherson.

236. ADVANCED BACTERIOLOGY AND RESEARCH. Prerequisite, Bacteriology 132 or its equivalent. *Elective.

Opportunity and facilities are offered to qualified students to pursue advanced work in bacteriology and immunology. *Hours arranged.* Professor MacPherson.

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* Before registering for this course the academic student must secure the permission of his Dean.

## DEPARTMENT OF PATHOLOGY

201. PATHOLOGY.

Embraces a consideration of general and special pathology from the chemical and physiological as well as the morphological aspects. Lectures and recitations are combined with laboratory work in a study of both gross and microscopical preparations. Each student is supplied with a set of "loan" sections (about 200) which form the basis of the study. This is supplemented by the use of a considerable number of special demonstration sections. A series of practical examinations is held, in which each student is required to diagnose the process and describe the salient features in about fifty "unknown" sections. A series of several hundred preserved pathological specimens, selected to illustrate many of the common and some of the uncommon pathological processes, is arranged on open shelves in the laboratory. These are studied in conjunction with the microscopical work. The class is divided into small sections which rotate in attending the autopsies at Watts Hospital (Durham). Each student is required to write his own protocol of each autopsy which he observes. *Six hours a week, fall quarter; eight hours a week, winter quarter; twelve hours a week, spring quarter.* Professor Bullitt; Doctor Byrnes. See Catalogue of the Graduate School.

212. CLINICAL PATHOLOGY.

The object of this course is to familiarize the student with routine examinations of the blood, urine, feces, gastro-intestinal contents, sputum, transudates, and exudates; to acquire accuracy in such procedures and to secure a general understanding of their relation to the diagnosis of disease. Material to be examined consists of preserved specimens and fresh specimens from Watts Hospital (Durham). Opportunity is also afforded for the study of patients with special reference to the laboratory examinations indicated and for the correlation of the findings. *Six hours a week, spring quarter.* Doctor Byrnes.

223. ADVANCED PATHOLOGY. Two courses are offered.

(a) Surgical Pathology (prerequisite, Pathology 201); a detailed study of surgical material, with special reference to tumors. (b) Experimental Pathology; production of various inflammatory lesions and study of their development. *Hours by arrangement.* Professor Bullitt.

## DEPARTMENT OF PHARMACOLOGY

222. PHARMACOLOGY AND MATERIA MEDICA.

The course in Pharmacology extends throughout the second year of the medical curriculum. The character of the work permits a division of the course into three parts: (a) A consideration of the ways in which drugs may affect the organism. This introduction embraces a discussion of the various physicochemical forces influencing drug activity, and the modification of the action of these conditions in different pathological states of the organism, such, for instance, as febrile conditions and various metabolic disturbances. (b) A general study of the pharmacology of the important drugs. The drugs are considered in groups depending upon their predominant effect in the body. The student learns the preparation, their dose, physiological incompatibilities, and considers in detail the way in which the drugs act as pharmacological agents. The symptoms and treatment of poisoning are considered following the discussion of the pharmacology of the group. (c) A consideration of the pharmacology of the drugs in the pathological animal, with a discussion of the modification of drug activity in various pathological states. In conjunction with this study emphasis is given to the use of drugs as therapeutic agents and a study is made employing such remedies as are indicated in the form of

a prescription. Students are required to write prescriptions, which are then subjected to the criticism of various members of the class and the instructor. *Three hours a week, fall quarter; five hours a week, winter and spring quarters.* Professors MacNider, Donnelly.

223. PHARMACODYNAMICS.

This part of the general course in pharmacology consists in a careful and accurate study of the action of practically all of the more important drugs on animals. For this work, the higher animals, such as the cat and dog, are chiefly used. The class is divided into groups of two or four, and the experimental work is conducted by the student. Each student is required to hand in to the instructor at the completion of the course a laboratory notebook containing a detailed account of each experiment, and explanation of the results obtained, and the tracings made during the experiment. Oral and written recitations are frequently held. *Five laboratory hours a week, winter and spring quarters.* Professors MacNider, Donnelly. See Catalogue of the Graduate School.

234. ADVANCED PHARMACOLOGY.

Two types of courses will be offered: (a) an experimental study of the action of various drugs upon the normal animal; (b) an experimental study of the action of various drugs and other agencies upon the pathological animal. *Hours by arrangement.* Professor MacNider.

## DEPARTMENT OF PHYSIOLOGY AND BIOLOGICAL CHEMISTRY

201-202. PHYSIOLOGY.

A lecture course for two quarters, in which the functions of the systems of organs are explained and discussed as fully as time permits. The subjects include the digestion, the circulation, respiration, elimination, metabolism, the internal secretions, heat regulation, the nervous system, and the special senses. Attention is called to pathological conditions which are commonly associated with disturbed functions and which emphasize the importance of normal function. *Six hours a week, fall and winter quarters.* Professor Manning. See Catalogue of the Graduate School.

203-204. EXPERIMENTAL PHYSIOLOGY.

A laboratory course during the fall and winter quarters of the second year. Special experiments performed in small sections are carried on in the winter quarter. In this course the student learns the use of physiological apparatus; studies the neuro-muscular system and heart on the frog and turtle; the vascular and respiratory systems on the rabbit and dog; and performs a limited number of experiments on the human, making pulse records, taking blood pressure, determining basal metabolic rates, etc. *Six laboratory hours a week, fall and winter quarters.* Professor Manning. See Catalogue of the Graduate School.

104. BIOLOGICAL CHEMISTRY 1.

A lecture and laboratory course in elementary biological chemistry covering the following topics: (1) the physical chemistry of protoplasm, (2) the chemistry of the carbohydrates, fats, and proteins, (3) the chemical composition of foods and body tissues, (4) the scientific principles of nutrition. The laboratory work covers the same general outline as the class-room work. *Three lecture and six laboratory hours a week, winter quarter, first year.* Professor McChesney. See Catalogue of the Graduate School.

205. BIOLOGICAL CHEMISTRY 2.

Chiefly a laboratory course in digestion and analytical methods. The following topics are covered in laboratory: (1) digestion (salivary, gastric, intes-

tinal), (2) pathological urine, (3) quantitative urine analysis, (4) blood analysis (qualitative and quantitative). Occasional lectures are given on the subjects of digestion and nitrogen metabolism with particular reference to the relation of the latter to the composition of blood and urine. *Six hours a week (lectures and laboratory), fall quarter, second year.* Professor McChesney. See Catalogue of the Graduate School.

206. BIOLOGICAL CHEMISTRY 3.

An advanced course for graduate students covering aspects of biological Chemistry not treated in courses 1 and 2. For details see Catalogue of the Graduate School. *Nine hours a week (lectures and laboratory), spring quarter.* Professor McChesney. See Catalogue of the Graduate School.

## ADDITIONAL COURSES

The charity wards and out-patient department of Watts Hospital (220 beds) are available to the medical school for teaching purposes. These facilities provide clinical material for the courses in Physical Diagnosis and Clinical Pathology, and afford opportunity for attendance upon autopsies and the study of fresh pathological specimens.

231. PHYSICAL DIAGNOSIS.

A course in the method of history taking and physical examination with lectures, demonstrations, and practical exercises.

At the beginning emphasis is placed on the physical signs in the normal subject. The class is divided into groups for practical exercises on and demonstrations of the clinical material in the University Infirmary, in the wards and out-patient department of Watts Hospital (Durham), and in the State Tubercular Sanatorium. Each student has twenty practical exercises of three hours each. *Seven hours a week, spring quarter.* Professor Berryhill and Assistants from Medical Staff of Watts Hospital.

232. INTRODUCTION TO OBSTETRICS.

A course of ten lectures which is essentially an introduction to obstetrical and gynecological problems. It deals with human embryology, the foetus and its development, subjective and objective signs and symptoms of pregnancy, management of labor (briefly), the mechanism of labor, general symptomatology and diagnosis, menstruation, infection, and tumors. *One hour a week, winter quarter.* Doctor Ross.

# DIVISION OF PUBLIC HEALTH

## SPECIAL STAFF

Milton J. Rosenau, A.M., M.D., *Director.*

Carl V. Reynolds, M.D., *Secretary of North Carolina State Board of Health and State Health Officer, Director of Field Work.*

Robert E. Fox, A.B., M.D., M.P.H., *Director Division of County Health Work, North Carolina State Board of Health.*

John H. Hamilton, B.S., M.D., *Director State Laboratory of Hygiene, North Carolina State Board of Health.*

Warren H. Booker, C.E., *Director Division of Sanitary Engineering, North Carolina State Board of Health.*

Robert T. Stimpson, A.B., M.D., C.P.H., *Director Bureau of Vital Statistics, North Carolina State Board of Health.*

Joseph C. Knox, M.D., M.P.H., *Director Division of Epidemiology, North Carolina State Board of Health.*

George M. Cooper, M.D., *Director Division of Preventive Medicine, and Assistant State Health Officer, North Carolina State Board of Health.*

Ernest A. Branch, D.D.S., *Director Division of Oral Hygiene, North Carolina State Board of Health.*

Daniel Allan MacPherson, Sc.M., Ph.D., *Professor of Bacteriology.*

Arthur Russell Hollett, S.M.E., *Instructor in Civil Engineering.*

John Charles Geyer, S.M.E., *Instructor in Civil Engineering.*

Malcolm H. Rourk, M.D., M.P.H., *District Health Officer and Instructor in Public Health for Social Workers.*

## GENERAL STATEMENT

The University of North Carolina has established a Division of Public Health and offers courses of study to supplement the basic work in this field, in order that immediate and practical needs of trained personnel in this state and region may be adequately met. This service is made possible through the coördination of the facilities and the staffs of the Schools of Medicine and Engineering of the University and the North Carolina State Board of Health, the three agencies of the state which are concerned with the problems of public health.

The curriculum covers a period of twelve weeks (soon to be made sixteen weeks) and includes both intra-mural instruction and field work. The courses offered are those best adapted to equip a physician for the special responsibilities of a health officer and those which may be covered within a short period of intensive study.

The students in the Division of Public Health are enrolled in the University of North Carolina and enjoy all the rights and privileges of the general student body. Upon completion of the course a certificate of credit is awarded by the University and this is endorsed by the North Carolina State Board of Health.

## COURSES OF STUDY

101. PUBLIC HEALTH ADMINISTRATION.

One morning a week, three hours, (Monday) for ten weeks.
Field work all day Friday for ten weeks.

*Lectures:* The theory of Public Health Administration is developed by a study of administrative methods actually employed by various governmental units, including municipalities, counties, states, and the Federal Government, with particular emphasis on public health activities embracing problems of particular concern in North Carolina.

Some time is given to proper procedures in administrative control of the more important communicable diseases, such as Tuberculosis, Venereal Diseases, Diphtheria, Pneumonia, Measles, Whooping Cough, Meningitis, Typhoid Fever, Intestinal Parasites, Rabies, and Malaria; the public health administrative procedure being developed around

(1) the sanitation of the environment,
(2) the control of communicable diseases,
(3) the education of the individual and the community in the principles of personal and community hygiene,
(4) the organization of a medical and nursing service for the early diagnosis of diseases, and the prevention of physical and mental defects,
(5) the development of a social machine which will insure each individual in the community a standard of living adequate to the maintenance of health.

Each student is required to make a public health survey of some city or town, developing

(a) a description of the town,
(b) the medical service available,
(c) the health administration,
(d) the vital statistics of the town,
(e) the method of handling communicable diseases, and any special measure used to control the more common communicable diseases,
(f) the program for hospitalization of communicable diseases,
(g) any diagnostic facilities for communicable diseases,
(h) the venereal disease control program,
(i) the tuberculosis control program,
(j) the child hygiene program, including prenatal service, infant and pre-school hygiene, school hygiene, industrial hygiene, and health education,
(k) sanitation as applied to milk, food, water, sewage, housing, and miscellaneous items,
(l) with a general survey of conditions found, criticisms, and recommendations.

*Field Studies and Demonstration:* These are arranged for Friday of each week for ten weeks, and are given in coöperation with a course in Epidemiology and Child Hygiene. The exercises are selected to illustrate the practical application of the data that has been presented in the lectures.

Active coöperation has been effected with various health departments and institutions in the State of North Carolina, including the Durham City and County Health Department; the Cumberland County Health Department; the Wayne County Health Department; the Wake County Health Department; the City Health Department of Greensboro; the Guilford County Health Department; the Guilford County Sanatorium; the Winston-Salem City Health Department; the Forsyth County Health Department; the Forsyth County Sanatorium; the North Carolina Tuberculosis Sanatorium; the North Carolina State Board of Health and the State Laboratory of Hygiene; the Dix Hill State Hospital for the Insane; the other official and non-official health agencies. Those Health Departments in close proximity to the University of North Carolina are used for these field studies and demonstrations.

The lectures in this course are given by Dr. R. E. Fox, Director of the Division of County Health Work; Dr. John H. Hamilton, Director of the State Laboratory of Hygiene; and Mr. Warren H. Booker, Director of the Division of Sanitary Engineering; all of the North Carolina State Board of Health.

111. THE PRINCIPLES AND PRACTICES OF SANITATION.

A general survey course, consisting of lectures, demonstrations, laboratory exercises, and field visits, designed to meet the needs of students preparing to engage in public health activities. The following subjects will receive attention: (1) Historical and Epidemiological background of sanitation, its direct and indirect effects on the public health; (2) Sanitary surveys; (3) Rural sanitation; (4) Water supply—protection of sources, collection, purification and distribution; (5) Sewerage—sewage collection, treatment, disposal, stream sanitation; (6) Laboratory analysis of water, sewage, and industrial wastes; (7) Illumination; (8) Plumbing; (9) Food Sanitation—production, preservation and preparation; (10) Milk Sanitation; (11) Shellfish sanitation; (12) Garbage and refuse collection and disposal; (13) Sanitation of schools, camps, and bathing places. *Three lecture and four laboratory hours a week.*

This course includes about 8 field trips with reports on the following:

1. Sanitary survey of rural and domestic water supplies.
2. Inspection of several water purification plants.
3. Inspection of several sewage disposal works.
4. Inspection of garbage collection equipment and incinerators.
5. Inspection and rating of dairies of all grades.
6. Inspection and rating of hotel and restaurant kitchens and food stores.
7. Inspection and rating of prison camp and school sanitary facilities.

Arthur Russell Hollett, S.M.E., and John Charles Geyer, S.M.E., School of Engineering, U. of N. C.

121. EPIDEMIOLOGY.

*Lectures:* Three hours per week for a period of ten weeks.

*Content:* The Epidemiology of the filth-borne, gastro-intestinal diseases; the respiratory diseases; the insect-borne diseases; the deficiency diseases; and certain of the virus diseases.

In addition to this, part of the field work is of an epidemiological nature, particularly in visiting the various county health departments.

The epidemiological study of one disease, in written form, is required of each student. The average length of each thesis approximately two thousand words. Dr. J. C. Knox.

131. CHILD HYGIENE.

*Lectures:* Two hours a week for a period of ten weeks.

*Content:* These lectures are supported by field work in the various health agencies in the State: well-baby clinics: feeding stations. Other points included

in lectures: growth and development; food requirements; immunity and protection by immunization; child welfare agencies; diseases peculiar to this group. Scope of work of this nature, local, State, National. Dr. J. C. Knox, Dr. G. M. Cooper, and Dr. E. A. Branch.

141. VITAL STATISTICS.

Each period consists of an hour lecture and two hours of laboratory work. The lectures in this course outline the process of vital registration in North Carolina as it functions in the county, district, and state health departments, and the part of the health officer in this plan. Methods are presented of collecting, tabulating and graphically presenting statistical data, with special emphasis on their use by the county health officer. The calculations include population estimations, rates and ratios, and simple curve fitting. Laboratory work furnishes the student an opportunity to apply the principles covered by the lectures.

One morning a week for ten weeks. Dr. R. T. Stimpson and Dr. J. H. Hamilton.

151. PUBLIC HEALTH LABORATORY METHODS.

Lectures, discussions, and practical laboratory work on the applications of bacteriology, immunology, and parasitology to the diagnosis of diseases of public health importance. Forty-five hours. Professor D. A. MacPerson.